

AMENDMENTS TO THE CLAIMS

1-19. (Cancelled)

20. (New) A method of controlling and monitoring via client systems calls placed through telephony devices, the method comprising:

providing a plurality of client systems and telephony devices within a communication network;

for each of the telephony devices, providing a logical representation and a physical representation for the telephony device, the logical representation for a telephony device representing a communication link of the telephony device, the physical representation of a telephony device representing physical attributes of the telephony device;

determining relationships between client systems and telephony devices, a relationship indicating that a client system is to control a telephony device via the logical representation and the physical representation of the telephony device;

for each relationship between a client system and a telephony device, establishing a device control channel between the physical representation of the telephony device and the client system; and

establishing a call control channel between the logical representation of the telephony device and the client system the call control channel being different from the device control channel; and

under control of each client system that has a relationship with a telephony device,

controlling the telephony device via the logical representation using the call control channel and via the physical representation using the device control channel to place calls via the telephony device; and

monitoring the telephony device via the logical representation using the call control channel and via the physical representation using the device control channel to receive calls via the telephony device.

21. (New) The method of claim 20 including for each telephony device, when the telephony device is a time division multiplexing (TDM) device, associating the logical representation and the physical representation of the telephony device with a phone number of the telephony device; and when the telephony device is a SIP device, associating the logical representation of the telephony device with an electronic mail address; and associating the physical representation of the telephony device with a fully qualified domain name.

22. (New) The method of claim 20 wherein the determining of relationships between telephony devices and client systems includes searching a network directory for a listing of telephony devices within the communication network.

23. (New) The method of claim 20 wherein the establishing a device control channel between a client system and a telephony device comprises:
sending a SIP INVITE message from the client system to the physical representation of the telephony device;
receiving a SIP OK response sent from the physical representation of the telephony device to the client system;
sending a SIP acknowledgement (ACK) message from the client system to the physical representation of the telephony device in response to receiving the SIP OK response; and
sending a SIP SUBSCRIBE message from the client system to the physical representation of the telephony device;

receiving a SIP OK response sent from the physical representation of the telephony device to the client system; and
receiving a SIP NOTIFY message from the physical representation of the telephony device to the client system to notify the client device of changes in the status of a physical attribute of the telephony device.

24. (New) The method of claim 20 wherein the establishing a call control channel between a client system and a telephony device comprises:

sending a SIP OPTION message from the client system to the logical representation of the telephony device;
receiving a SIP OK response sent from the logical representation of the telephony device to the client system;
sending a SIP SUBSCRIBE message from the client system to the logical representation of the telephony device;
receiving a SIP OK response sent from the logical representation of the telephony device to the client system; and
receiving a SIP NOTIFY message from the logical representation of the telephony device to the client system to notify the client device of changes in the status of communication link of the telephony device.

25. (New) The method of claim 20 wherein when a telephony device with a relationship to a client system is a time division multiplexing ("TDM") device, providing a front end SIP unit in communication with the telephony device and the client system adapted to convert SIP data to computer-telephony-integration ("CTI") data and convert CTI data to SIP data.

26. (New) A computer-readable medium containing instructions for a client system to control and monitor calls placed through a telephony device of a communication network, each telephony device having a logical representation and a

physical representation for the telephony device, the logical representation for a telephony device representing a communication link of the telephony device, the physical representation of a telephony device representing physical attributes of the telephony device, by a method comprising:

- determining a relationship between the client system and a first telephony device;
- establishing a device control channel between the physical representation of the first telephony device and the client system;
- establishing a call control channel between the logical representation of the first telephony device and the client system;
- controlling the first telephony device via the logical representation using the call control channel and via the physical representation using the device control channel; and
- monitoring the first telephony device via the logical representation using the call control channel and via the physical representation using the device control channel.

27. (New) The computer-readable medium of claim 26 including

- when the first telephony device is a time division multiplexing (TDM) device, associating the logical representation and the physical representation of the first telephony device with a phone number of the telephony device;
- and
- when the first telephony device is a SIP device,
- associating the logical representation of the first telephony device with an electronic mail address; and
- associating the physical representation of the first telephony device with a fully qualified domain name.

28. (New) The computer-readable medium of claim 27 wherein the determining of relationships between a telephony device and the client system includes

searching a network directory for a listing of telephony devices within the communication network.

29. (New) The computer-readable medium of claim 26 wherein the establishing a device control channel between the client system and the first telephony device comprises:

- sending a SIP INVITE message from the client system to the physical representation of the first telephony device;
- receiving a SIP OK response sent from the physical representation of the first telephony device to the client system;
- sending a SIP acknowledgement (ACK) message from the client system to the physical representation of the first telephony device in response to receiving the SIP OK response; and
- sending a SIP SUBSCRIBE message from the client system to the physical representation of the first telephony device;
- receiving a SIP OK response sent from the physical representation of the first telephony device to the client system; and
- receiving a SIP NOTIFY message from the physical representation of the first telephony device to the client system to notify the client device of changes in the status of a physical attribute of the telephony device.

30. (New) The computer-readable medium of claim 29 wherein the establishing a call control channel between the client system and the first telephony device comprises:

- sending a SIP OPTION message from the client system to the logical representation of the first telephony device;
- receiving a SIP OK response sent from the logical representation of the first telephony device to the client system;

sending a SIP SUBSCRIBE message from the client system to the logical representation of the first telephony device;
receiving a SIP OK response sent from the logical representation of the first telephony device to the client system; and
receiving a SIP NOTIFY message from the logical representation of the first telephony device to the client system to notify the client device of changes in the status of communication link of the first telephony device.

31. (New) The computer-readable medium of claim 26 wherein when the first telephony device is a time division multiplexing ("TDM") device, providing a front end SIP unit in communication with the first telephony device and the client system adapted to convert SIP data to computer-telephony-itegration ("CTI") data and convert CTI data to SIP data.

32. (New) The computer-readable medium of claim 26 wherein the establishing of the device control channel includes establishing a first SIP session and establishing of the call control channel includes establishing a second SIP session that is different from the first SIP session.

33. (New) A communication network comprising:
a plurality of telephony devices, each telephony device having a logical representation and a physical representation for the telephony device, the logical representation for a telephony device representing a communication link of the telephony device, the physical representation of a telephony device representing physical attributes of the telephony device; and
a plurality of client systems, each client system for controlling and monitoring calls placed through a telephony device by performing steps comprising:

determining relationships between the client systems and a first telephony device;
establishing a device control channel between the physical representation of the first telephony device and the client system; and
establishing a call control channel between the logical representation of the first telephony device and the client system; and
controlling the first telephony device via the logical representation using the call control channel and via the physical representation using the device control channel; and
monitoring the first telephony device via the logical representation using the call control channel and via the physical representation using the device control channel.

34. (New) The communication network of claim 33 wherein
when the first telephony device is a time division multiplexing (TDM) device, the logical representation and the physical representation of the first telephony device is associated with a phone number of the telephony device; and
when the first telephony device is a SIP device,
the logical representation of the first telephony device is associated with an electronic mail address; and
the physical representation of the first telephony device is associated with a fully qualified domain name.

35. (New) The communication network of claim 33 wherein the determining of the relationship between a telephony device and the client system includes searching a network directory for a listing of telephony devices within the communication network.

36. (New) The communication network of claim 33 wherein the establishing a device control channel between the client system and the first telephony device comprises:

- sending a SIP INVITE message from the client system to the physical representation of the first telephony device;
- receiving a SIP OK response sent from the physical representation of the first telephony device to the client system;
- sending a SIP acknowledgement (ACK) message from the client system to the physical representation of the first telephony device in response to receiving the SIP OK response; and
- sending a SIP SUBSCRIBE message from the client system to the physical representation of the first telephony device;
- receiving a SIP OK response sent from the physical representation of the first telephony device to the client system; and
- receiving a SIP NOTIFY message from the physical representation of the first telephony device to the client system to notify the client device of changes in the status of a physical attribute of the telephony device.

37. (New) The communication network of claim 33 wherein the establishing a call control channel between the client system and the first telephony device comprises:

- sending a SIP OPTION message from the client system to the logical representation of the first telephony device;
- receiving a SIP OK response sent from the logical representation of the first telephony device to the client system;
- sending a SIP SUBSCRIBE message from the client system to the logical representation of the first telephony device;
- receiving a SIP OK response sent from the logical representation of the first telephony device to the client system; and

receiving a SIP NOTIFY message from the logical representation of the first telephony device to the client system to notify the client device of changes in the status of communication link of the first telephony device.

38. (New) The communication network of claim 33 including a front end SIP unit in communication with the first telephony device and the client system adapted to convert SIP data to computer-telephony-integration ("CTI") data and convert CTI data to SIP data when the first telephony device is a time division multiplexing ("TDM") device.

39. (New) The communication network of claim 33 wherein the first telephony device is a SIP-enabled PBX phone.